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Northumbria Research Conference 2011

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Title:

“Hybrid communication systems, FSO/RF and RoF: reliable and scaled communications anywhere”

Keywords:

Free Space Optical Communications, Radio-over-Fibre, Wireless Communications, Hybrid systems, Green Communications

Abstract:

Current network and telecommunication systems are required to provide higher data rates in access networks to an increasing number of users. This fact is mainly due to the increase in the Internet traffic data, which is related with the higher demand of online added-value online content, as a result of a society increasingly more interconnected. New emergent radio technologies play a key role to supply these high-demand services to customer, e.g., UWB, WIMAX and LTE-advanced. [1-3]

How to carry them to final customer? How to backup these services?

Free-space optics (FSO), Radio-over-fibre (RoF) and RF/FSO Hybrid communication systems become a solution to deploy these services on indoor/outdoor scenarios avoiding architecture problems on WAN environments, e.g., university campus, companies' parks [4]. Moreover, these systems will fit emergency scenarios, e.g. earthquakes, tsunamis, where the classical communications infrastructure cost and time replacement is very high [5]. On the other hand, the implementation of RF/FSO or RoF systems are enclosed in the new green communications issues, because they share the common goal to implement energy efficiency communications at anywhere scenario [6, 7]. Therefore, emergent radio technologies and their application on FSO and RoF systems are a challenging research issue nowadays.

(abstract = 190 words)

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